

Notice of Allowability

Application No.

10/693,605

Examiner

Alain L. Bashore

Applicant(s)

INUI ET AL.

Art Unit

1792

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 10-12-07.
2. ☒ The allowed claim(s) is/are 1-8 and 13-22.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.


Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date 8-31-07
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____


ALAIN L. BASHORE
PRIMARY EXAMINER

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see page 11, filed 10-12-07, with respect to the 35 USC 103 rejection of record have been fully considered and are persuasive. The previous rejection of record has been withdrawn. The obviousness double patenting rejection and 35 USC 112 rejection is hereby withdrawn.

EXAMINER'S AMENDMENT

2. examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Miller on 3-4-08.

The application has been amended as follows:

In claim 4; lines 3-4, delete: "such that said first photo-curable resin is cured on a side of said optical path portion while said optical path portion is formed";

In claim 7; lines 3-4, delete: "such that said first photo-curable resin is cured on a side of said optical path portion while said optical path portion is formed";

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In claim 13; line 5, delete "said" and insert in place thereof --a--;

In claim 13, line 6, delete "said" and insert in place thereof --a--;

In claim 13, line 7, delete both occurrences of "said" and insert in both places --a-

In claim 17; line 5, delete "said" and insert in place thereof --a--;

In claim 17, line 6, delete "said" and insert in place thereof --a--;

In claim 17, line 7, delete both occurrences of "said" and insert in both places --a-

Allowable Subject Matter

3. Claims 1-8, 13-22 are allowed. The drawings filed 3-8-04 are acceptable.

Reasons for allowance

4. The following is an examiner's statement of reasons for allowance:

The term "leakage light" is defined by applicant in the specification on page 52, lines 13-25.

The present invention includes independent claims 1, 3, 6, 13, 17. Claim 1 recites a method of producing an optical waveguide. Claim 3 recites a method of producing an optical waveguide having an optical path portion of a high refractive index and a portion of a low refractive index on a surface of the optical path portion by using a

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mixture solution of a first photo-curable resin of a low refractive index and a second photo-curable resin of a high refractive index different in curing mechanism. Claim 6 recites a method of producing an optical waveguide having an optical path portion of a high refractive index and a portion of a low refractive index on a surface of the optical path portion by using a mixture solution of a first photo-curable resin of a low refractive index and a second photo-curable resin of a high refractive index different in curing mechanism. Claim 13 recites a method of producing an optical waveguide having an optical path portion of a high refractive index and a portion of a low refractive index on a surface of the optical path portion by using an optical waveguide-producing material composition. Claim 17 recites a method of producing an optical waveguide having an optical path portion of a high refractive index and a portion of a low refractive index on a surface of the optical path portion by using an optical waveguide-producing material composition.

Japaneses patent publication JP-2000-347043 (Kagami et al '043) is considered the closest prior art. Kagami et al teaches a method of producing an optical waveguide is disclosed wherein an optical member is prepared and curing a photo-curable resin such that characteristics after the curing is different than before curing.

Kagami et al does not disclose the claimed combination including:

In claim 1:

forming an optical member for use in optical transmission; and

emitting leakage light from said optical member to cure a

photo-curable resin on a surface of said optical member, said cured photo-curable resin being deposited on said surface and having a lower refractive index than a refractive index of an outer circumference of said optical member

In claim 3:

a first photo-curing for curing said first photo-curable resin by first light

irradiation capable of curing said first photo-curable resin but incapable of curing said second photo-curable resin while enclosing said second photo-curable resin in said cured first photo-curable resin to thereby form an optical path portion transparent optically;

a second photo-curing for curing said first photo-curable resin by second light

irradiation capable of curing said first photo-curable resin but incapable of curing said second photo-curable resin in the same manner as said first light irradiation to thereby deposit said cured first photo-curable resin on said surface of said optical path portion after the formation of said optical path portion; and

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a third photo-curing for curing said second photo-curable resin enclosed in said optical path portion and uncured residual part of said mixture solution entirely by third light irradiation capable of curing both said first photo-curable resin and said second photo-curable resin.

In claim 6:

a first photo-curing of curing said first photo-curable resin by first light irradiation capable of curing said first photo-curable resin but incapable of curing said second photo-curable resin while enclosing said second photo-curable resin in said cured first photo-curable resin to thereby form an optical path portion transparent optically;

a second photo-curing for curing said first photo-curable resin by second light irradiation capable of curing said first photo-curable resin but incapable of curing said second photo-curable resin in the same manner as said first light irradiation to thereby deposit said cured first photo-curable resin on said surface of said optical path portion after the formation of said optical path portion; and

extracting said portion on said surface of said optical path portion and said optical path portion made of said cured first photo-curable resin with said second photo-curable resin enclosed therein from said mixture solution; and

a third photo-curing for curing said second photo-curable resin enclosed in said optical path portion and uncured residual part of said first photo-curable resin by third

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light irradiation capable of curing both said first photo-curable resin and said second photo-curable.

In claim 13:

a first photo-curing of curing said first photo-curable resin by first light irradiation capable of curing said first photo-curable resin but incapable of curing said second photo-curable resin while enclosing said second photo-curable resin in said cured first photo-curable resin to thereby form an optical path portion transparent optically;

a second photo-curing for curing said first photo-curable resin by second light irradiation capable of curing said first photo-curable resin but incapable of curing said second photo-curable resin in the same manner as said first light irradiation to thereby deposit said cured first photo-curable resin on said surface of said optical path portion after the formation of said optical path portion; and

extracting said portion on said surface of said optical path portion and said optical path portion made of said cured first photo-curable resin with said second photo-curable resin enclosed therein from said mixture solution; and

a third photo-curing for curing said second photo-curable resin enclosed in said optical path portion and uncured residual part of said first photo-curable resin by third light irradiation capable of curing both said first photo-curable resin and said second photo-curable resin.

In claim 17:

a first photo-curing for curing said radical polymerizable material by first light irradiation at said specific wavelength capable of activating said radial polymerization initiator while enclosing at least said cationic polymerizable material and said cationic polymerization initiator in said cured radical polymerizable material to thereby form an optical path portion transparent optically;

a second photo-curing for curing said radical polymerizable material on the surface of said optical path portion by continuing said first light irradiation after the formation of said optical path portion; and

extracting cured part immersed in uncured part from uncured residual part of said composition; and

a third photo-curing for curing said uncured part immersed in said cured part by second light irradiation capable of activating both said radial polymerization initiator and said cationic polymerization initiator.

For these reasons claims 1, 3, 6, 13, 17 are deemed to be allowable over the prior art of record, and claims 2,4-5, 7-8, 14-16, 18-22 are allowable by dependency.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alain L. Bashore whose telephone number is 571-272-6739. The examiner can normally be reached on about 7:30 am to 5:00 pm (Mon. thru Thurs.).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on 571-272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Alain L. Bashore/
Primary Examiner
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